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ABSTRACT

A wide variety of incentive and disincentive programs are presented in an effort to stabilize the population and prevent bankruptcy of physical, economic, and social resources, particularly in countries like India and China. Following an introduction, the document discusses several programs, including (1) the use of small one-time payments for individuals who become sterilized and to family planning workers or doctors for each acceptor recruited; (2) incentives that improve welfare such as deferred incentive schemes like the "No-Birth Bonus Scheme" by private industry or government pension programs, in which accounts are credited with later collection contingent upon success in having a small family; (3) community development incentives in which whole villages are rewarded with development programs if the birth rate falls; (4) penalization of large families by imposing costs or withholding benefits; (5) emergency measures such as India's compulsory sterilization and China's one-child policy; and (6) expansion of the role of other incentive and disincentive schemes such as paying women to remain childless longer and developing programs to improve the lot of women. Also provided are four data tables illustrating countries offering small, one-time payments; average number of living children of women undergoing sterilization; fertility declines of all of India and the Tea Estates with and without "No-Birth Bonus" schemes; and Singapore's birthrate from 1960-1982. (LH)

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Promoting Population Stabilization: Incentives for Small Families

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Introduction

Bringing population growth in balance with resources has been on the world's agenda since the sixties. For most of that time, family planning efforts have been aided by a steadily expanding, if unevenly sliced, economic pie. As measured by gross national product, per capita food production, infant mortality, life expectancy and similar indicators, life improved for most people in the world between the end of World War II and the early seventies. Since the sixties, birth rates have fallen almost everywhere (Africa is the notable exception), and world population growth has slowed.

But in the seventies, the world turned a corner. The oil shock of 1973 began a decade that saw double-digit inflation, high interest rates, large budget deficits and, for developing countries, declining terms of trade. Growth in the world's economy predictably suffered. Where global output of goods and services grew at a healthy 5 percent per year from the fifties through the early seventies, output expanded at only 3.5 percent annually between 1973 and the second oil shock of 1979. The last three years have seen only 1.6 percent annual growth, and many countries, including most of the industrialized world, have experienced actual contractions in the output of goods and services.[1]

The impact of this slower growth on Third World countries has varied. The newly industrialized countries of East Asia have averaged an impressive 7 percent annual growth rate through the seventies and early eighties. Others have grown modestly, but at the expense of enormous debt. Still others began the eighties with economies producing less for each person than in the early seventies. The World Bank has identified 18 countries in this category; if economic conditions fail to improve, the ranks of these nations are almost certain to swell.[2]

In this climate, population policies become more crucial than ever before. Already 55 developing country governments have declared that population growth in their countries threatens economic gains, contradicting the academic debate over whether population growth is a problem at all. But where improvements in living standards once could come from expanded output, however distributed, per person

gains in the future are more likely to come, if at all, from curbing population growth to limit claims on output.[3]

6 Population growth slowed in Europe and North America as those regions grew wealthy. This change, called the "demographic transition," has been offered as proof that prosperity will also bring birth rates down in developing nations. But this option is quickly slipping from reach for much of the developing world. Rapid population growth, combined with slowly growing or even contracting economies, prevents the very increase in wealth that is supposed to reduce population growth. Unless fertility declines are hastened, some countries—often the ones least equipped to cope, such as Bangladesh, Pakistan and those in Sub-Saharan Africa—are projected to triple and even quadruple their numbers before stabilization.[4]

With this kind of arithmetic at work, interest has grown in family planning "incentives" and "disincentives"—social and economic rewards and penalties to promote contraception and small families. These measures, which exist in some two dozen developing nations, offer examples to countries needing to speed progress toward the "small family norm"—an average of no more than two or three children per couple—required to stabilize population.[5]

The task is a challenging one. In most developing countries, family planning services do not yet reach a majority of couples at risk of pregnancy; indeed, between a quarter and a third of births probably would not occur if every child born were a wanted child. Even so, populations in many developing countries would continue to grow rapidly because most Third World couples today still want families of four or more children.[6] Extra effort must be made if countries are to avoid the enormous population increases likely to bankrupt their physical, economic and social resources and worsen the lives of their citizens.

Though broad or firm conclusions from experience with incentives and disincentives are difficult to draw, much can be learned. We know that current efforts to lower birth rates are not working fast enough and are likely to become even more inadequate as economies

"When payments were increased fivefold to match those offered on private estates, sterilization clinics were swamped."

suffer. Imaginatively fashioned, incentives and disincentives might work faster. A wide variety of programs is waiting to be tried.

Small, One-Time Payments

One-time payments made to individuals who become sterilized or use contraceptives are the oldest kind of family planning incentive. Small payments are also commonly made to doctors and family planning workers for recruiting people to accept family planning. About 20 countries have family planning programs that include at least one of these incentives. (See Table 1.)

Payments for sterilization are the most familiar of these. First offered in India in the late fifties, sterilization payments are now offered in 10 countries.[7] In most of them, payments are meant to compensate people for lost wages, travel and meals. They are not intended to be an inducement, and calling them an incentive is technically inaccurate.

The amounts paid are small. In the fifties, Indians were paid the equivalent of $6 for being sterilized; today, they receive between $11 and $13—about two weeks wages for an agricultural worker. Sri Lankans who are sterilized receive the equivalent of $15, about a week's pay. In some countries, paid leave is given instead of cash. People sterilized in Bangladesh receive new clothing and reimbursement for travel costs.[8]

Experience shows that small payments can increase the number of people who will accept sterilization. In Sri Lanka, the number of sterilizations performed in government family planning programs increased when payments were first introduced in January 1980. Nine months later, when payments were increased fivefold to match those offered on private estates, sterilization clinics were swamped. The number of sterilizations performed at one clinic increased from 6 to 35 a day after the introduction of the payment and rose to 150 a day after the increase.[9]

Table 1: Countries Offering Small, One-Time Payments

To Individuals		To Doctors or Family Planning Workers	
Sterilization	Contraceptives	Sterilization	Contraceptives
Bangladesh	Bangladesh	Bangladesh	Bolivia
India	Egypt	Bolivia	Dominican Republic
Indonesia	India	Dominican Republic	Egypt
Malaysia (industries only)	Mauritius	Ghana	Ghana
Nepal	Nepal	Hong Kong	Hong Kong
South Korea	South Korea	India	India
Sri Lanka	Thailand	Indonesia	Indonesia
Thailand	Tunisia	Malaysia	Malaysia
Tunisia	Vietnam	Mauritius	Mauritius
Vietnam		Philippines	Philippines
		Singapore	Singapore
		South Korea	South Korea
		Sri Lanka	Sri Lanka
		Taiwan	Taiwan
		Thailand	Thailand
		Tunisia	Tunisia

Sources: Population Crisis Committee, Population Council, International Planned Parenthood Federation and United Nations.

Small payments for sterilization are most likely to attract people who have completed their families and do not necessarily push fertility low enough to stabilize populations. Even in relatively affluent and low-fertility countries such as Singapore and Hong Kong, women seeking sterilization in the late seventies usually had more than two children. (See Table 2.) Sterilization, an essential part of a family planning program, provides couples who have completed their families with a safe, effective and permanent form of birth control. But small payments for sterilization alone will not stabilize a population unless people want no more than two or three children.[10]

Table 2: Average Number of Living Children of Women Undergoing Sterilization

Country	Average Number of Children
Hong Kong	3.0
Indonesia	5.0
Malaysia	4.8
Nepal	4.4
Philippines	4.4
Singapore	3.1
Thailand	3.5

Source: The Population Council.

In some countries, people sterilized receive one-time payments that more than compensate for immediate costs. Both male and female civil servants undergoing sterilization in Singapore receive full paid leave from work, and children of sterilized parents receive priority for admission to primary school. South Korea offers even more extensive rewards. Every person sterilized is paid the equivalent of $13.50, but two-child couples who are sterilized receive priority in qualifying for business and housing loans and in purchasing subsidized public housing, and their children can receive free medical care at local clinics until they are five years old. Government officials can deduct education expenses for their family's two children from taxable income. Since May 1982 those qualifying as "needy" in South Korea can receive an additional payment if either spouse is sterilized before the age of 40—the equivalent of $140 in families with two children and $42 in families with three or four.[11]

One-time payments are sometimes made as part of a "drive" or special effort to increase sterilization acceptance. India conducted "drives" in the early seventies, setting up sterilization camps, often in a festival atmosphere, that brought medical teams to rural areas.

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Loudspeakers mounted on vehicles told villagers that they could be sterilized nearby. At several of these camps, organizers offered larger than usual incentives. In the states of Kerala and Gujarat, for example, clothing, a bucket of grain, an umbrella, lottery tickets and a small amount of cash—worth a total of about $13, more than an unskilled worker earned in a month—were given to men seeking a vasectomy. Some 63,000 men were sterilized at the Ernakulum camp in 30 days; an astonishing 200,000 vasectomies were performed in eight weeks in Gujarat.[12]

Since sterilization payments were first made, the practice has been criticized as coercive—involving not physical force, but unfair psychological influence.[13] A reward offered to a poor person by the government or someone else in a position of power, such as an employer, can be so compelling that a person undergoes a sterilization to receive the reward rather than to avoid having children. Either the amount of the reward or who offers it makes the payment difficult to refuse. This kind of influence grows stronger as the value of the payment increases, the poverty of the individual worsens, or the government's power grows in the eyes of its citizens.

People have reportedly been sterilized primarily to receive even a tiny incentive payment;[14] some of them undoubtedly did not realize that the operation would make them infertile. Critics of sterilization incentives argue that this is reason enough to abandon all of them. But programs can be designed to minimize the risk of accidental deception or unfair influence. Counseling, offered in most sterilization clinics around the world, can help people fully understand the consequences of sterilization. Also, payments can be matched to actual costs, and in-kind payments—meals, train tickets and the like—can be offered to avoid the misunderstanding that cash payments may create.

In assessing sterilization payments, it is important to remember that they do not work in a vacuum. Religious and cultural traditions that tell a woman to remain in the home, marry early and bear many children affect people long before they have information or the will to think on their own. This psychological coercion clearly harms women

and their children, if not the whole family. When compared with this kind of influence, a well-designed sterilization program becomes the better alternative.

Many governments promote sterilization because it is a permanent form of birth control; its permanence is also the reason that insufficient understanding of the operation has serious consequences. Paying women to use birth control pills or an IUD avoids these consequences, but may not reduce fertility much because these methods can be discontinued so easily. Effective birth control pill and IUD incentive programs also require follow-up to ensure continued use, making them costly to administer, impossible to enforce in most places and potential invasions of privacy. And because repeated and larger payments would be required to encourage continued use, these programs can be expensive. Indeed, effective programs offering incentives for nonpermanent methods of family planning are rare.

Payments for accepting contraceptives can be as coercive as those for sterilization, though the amounts are usually even smaller than sterilization payments. But using contraceptives will not sterilize permanently. Birth control pills accepted without complete understanding may not cause an unwanted loss of fertility at all; a woman who accepts birth control pills for an incentive payment rather than to limit her family size will probably not use them effectively. Though an IUD involves physical intrusion that can make it objectionable, it too does not cause permanent infertility. As with sterilization, adequate counseling is the antidote to insufficient understanding.

More common than payments to individuals are payments to family planning workers or doctors for each family planning acceptor recruited, each sterilization performed or each IUD inserted. In some programs, these payments are an efficient way of financing family planning on a per-case basis. In others, the payments are designed to induce workers or doctors to encourage more widespread distribution of family planning.

Worker payments have been shown to increase acceptance of family planning. In the Philippines, traditional birth attendants have been

given a transportation allowance for each new IUD or birth control pill user they recruit, so they can bring those acceptors to a clinic and attend monthly meetings at a health center. In the first 15 months that transportation allowances were provided, the number of acceptors increased 55 percent over the previous year.[15]

Payments to doctors and family planning workers have been criticized as sterilization payments have. Indeed, payments to "motivators" create a classic situation for unfair influence: those with prestige or power are paid to encourage those without it to accept family planning. There is particular room for abuse when people other than family planning professionals do the recruiting. For example, a follow-up study in the seventies of vasectomy camps in the Baroda District of India's Gujarat state found that the most influential motivators in rural areas were personnel from the local revenue department and the police department. The additional influence a tax collector or local policeman has when talking to people about sterilization is easy to understand.[16]

But payments to nonprofessional family planning workers are the exception rather than the rule. And professionals are usually paid amounts too small to promote deceit. In Bangladesh, for example, doctors receive the equivalent of $1.33 for each sterilization they perform, an hourly rate of about $4. Paramedics and nurses who assist the doctor with the surgery receive the equivalent of 50¢ per vasectomy and 66¢ for a female sterilization. Field workers, who do the actual recruiting, receive the equivalent of 33¢ per client recruited, for which they must visit the client's home, accompany him or her to the sterilization clinic, and remain at the clinic to fetch food and care for children until he or she is able to leave.[17]

Some programs making incentive payments to doctors and family planning workers have been abandoned because of problems. Workers paid to recruit clients have been accused of bribery and of claiming to have recruited more people than they actually did; people have reportedly been persuaded to forego the most appropriate family planning method in favor of one that earned a recruiter more money; and accounting for many small payments complicates the admin-

"Though one-time payments usually increase acceptance of family planning, they are not designed to promote the small family."

istration of a family planning program. Payments to workers can also sometimes increase resistance to family planning. In Indonesia, for example, incentives to fieldworkers were abandoned because women accepting IUDs felt it unfair that the workers received money when they were the ones who "suffered" with the IUD.[18]

One-time, relatively small payments to family planning acceptors and small payments to family planning workers or doctors are the simplest and least expensive kind of payments to promote family planning. However, the criticism they frequently receive, sometimes unfairly, makes family planning programs offering one-time payments politically vulnerable. Also, their effectiveness may not justify their liabilities. Though one-time payments usually increase acceptance of family planning, especially in the short term, they are not designed to promote the small family. One-time payments also do not in themselves improve an individual's life significantly. Other incentive programs can do both while avoiding many of the problems with one-time payments.

Incentives That Improve Welfare

People have large families for about as many reasons as there are cultures—indeed, personalities—in the world. Though many of the reasons are emotional, some are economic and can be quantified, albeit roughly. For many poor couples, more children mean additional income to the household and financial security in old age. Others have large families out of sheer force of habit, doing what their poverty-stricken families and neighbors have always done. Family planning incentives that improve welfare, either individually or for whole communities, can accomplish two mutually reinforcing goals—lower fertility and higher incomes. Targeting payments at the specific kind of poverty associated with repeated childbearing—the need for old-age support, for example—is a particularly efficient way to reach these goals.

Two kinds of incentive programs are designed to reduce fertility and increase wealth: deferred incentive schemes for individuals and

community development incentives. The first involves periodic payments to an account or fund for people who limit their families. Payments can take the form of old-age pensions, life insurance, education funds and the like, and are collected in the future, when people have succeeded in having a small family. The second kind of program rewards whole communities with development projects that raise incomes as fertility in the community falls.

Deferred payment schemes leave the choice of birth control method to the individual, unlike payments that encourage sterilization, the pill or the IUD. Also, unlike one-time payments, rewards are made for behavior over a long period of time that requires deliberate thought, avoiding the last-minute pressure that can be present in one-time payments. Thus, deferred payment programs pose less risk of unfair influence.

A number of imaginative deferred incentive schemes have been devised: annual rewards to married couples in the childbearing years who avoid pregnancy; a social security system that rewards small families; access to credit for small families; free life insurance for the children in small families; savings certificates for women, with the amount accumulated payable after three or four years without a pregnancy or at retirement; a bond awarded to couples who agree to limit their families, maturing when the woman completes her childbearing years.[19]

A few of these have been tried. In the early seventies, a pilot project in Taiwan set up education savings accounts for families in the rural township of Hua if they agreed to have no more than two or three children. Annual deposits averaging about $15 were made for families with two children or fewer; smaller amounts were paid to three-child families. Savings accounts were cancelled after the fourth child. After 14 years, the account totalled nearly $400 for two-child families, enough to pay for three years of high school for two children. A first-year grant of $40,000 was expected to pay for six years of annual deposits for the 700 village families participating in the program. If done nationwide, the program would save $7 in education costs alone

"If done nationwide, Taiwan's bank deposit program would have saved $7 in education costs alone for each dollar spent to lower fertility.'

for each dollar spent to lower fertility. If the plan failed, it would cost nothing, because deposits and bond earnings would be forfeited.[20]

After a year, 99 percent of eligible couples had reenrolled in the program. About 20 couples—3 percent of the participants—had children that disqualified them from the program. Half of those pregnancies were accidental. Oliver Finnegan, one of the program's designers, attempted to evaluate it after six years, but could not determine the contribution of the savings account scheme to the fertility decline experienced in Hua. The town had been incorporated into a large city, and the economic and cultural influences of urbanization could not be sorted out. The program's most useful lessons, however, are administrative ones. It showed, for example, the benefit of advance notice, with full, if not repeated, explanations of the program's details. It also showed how much can be accomplished with a minimum of administrative complexity.[21]

Governments can carry out deferred incentive programs directly through pensions or social security and indirectly by requiring private industry participation or by giving tax breaks to participating companies. Indian tax law specifically allows corporate tax deductions for family planning expenses, which can include the costs of a deferred incentive scheme. In the Philippines, a statute requires the Department of Labor to develop family planning programs for workers through pension plans, insurance benefits, savings deposits and other measures. Also encouraged are bonuses and time off for successfully avoiding pregnancy, and cash awards, leave, or promotion credits to female employees who do not use their maternity leave—limited to four births in the Philippines. In South Korea, a presidential decree requires employers to offer incentive programs that encourage small families.[22]

The most widely known program of deferred payments to individuals who limit their families was in the private sector—a "No-Birth Bonus Scheme" carried out on three tea estates in southern India for their employees. Women of childbearing age who agreed to have no more than three children and to space their second and third children three years apart had five rupees a month credited to an account. This was

about a day's pay when the program began in 1971. If a woman became pregnant, a substantial portion of her accumulated savings was forfeited to the company to cover its costs for maternity and child care. The program was designed so that a participating couple could collect enough money to acquire a plot of land when they retired.[23]

Private industry funds and accounts such as the No-Birth Bonus Scheme offer several advantages. They can cost governments only the tax breaks that might encourage companies to undertake such programs. Carried out in a decentralized way, firm by firm, they can be managed efficiently. They can also pay for themselves. Ronald Ridker, the U.S. Agency for International Development economist who designed the No-Birth Bonus Scheme, calculated that the program could pay for itself in saved child care, medical and work loss expenses. In fact, the Hawaiian Philippine Company found that each employee pregnancy in 1979 cost the company the equivalent of $165 in direct costs alone. Investing that amount at just 7 percent today would yield $660 in 20 years, a start on a no-birth bonus fund.[24]

If the tea estate program is typical, deferred incentive schemes in industry can get results. That program coincided with, if it did not cause completely, a rapid fertility decline. Birth rates on estates offering the No-Birth Bonus fell dramatically in the seventies, compared with India as a whole and with other estates without the incentive plan.[25] (See Figure 1.)

The results appear dramatic, but how the scheme actually contributed to the fall in birth rates is not certain. When women participating in the program were interviewed a few years after it began, an astonishing 52 percent could not name a single condition of the incentive plan correctly. As with the education bond scheme in Taiwan, however, the complexity of fertility declines is not all that the No-Birth Bonus Scheme revealed. Reviewing the program in 1980, Ronald Ridker noted that it probably would have been more successful and more fully understood if the tea estates had done one or more of the following: continued to offer a range of contraceptives, instead of turning exclusively to sterilization, as they did in the mid-seventies; maintained continual contact with the women enrolled in the plan to

"If the tea estate program is typical, deferred incentive schemes in industry can get results."

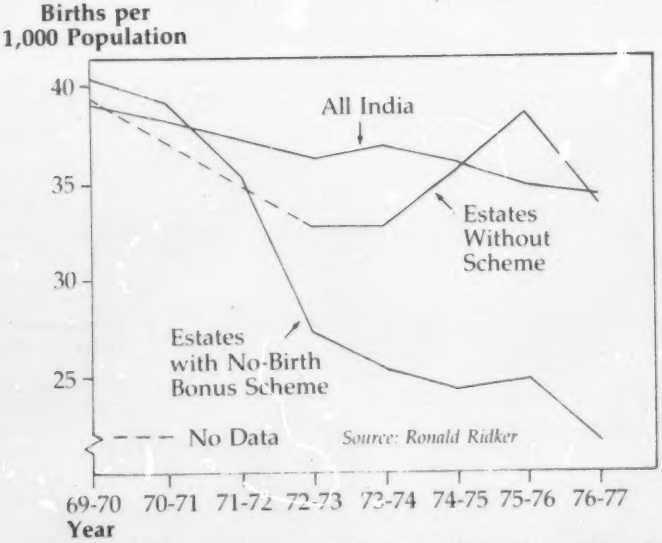

Figure 1: Fertility Declines, 1969-1977, All India and Tea Estates With and Without No-Birth Bonus Scheme

inform them of deposits, remind them of the rules and apprise them of the size of their accounts; and increase monthly deposits to keep pace with inflation.[26]

Though promising, private industry programs are not a panacea. Workers offered a no-birth bonus must be confident that their firm will remain solvent until they can collect benefits. In industries where workers change jobs frequently, such programs would be difficult to administer and probably acquire fewer participants. Also, though they may encourage the small family norm among workers, private industry programs alone cannot reduce a country's birth rate significantly. Particularly in the poorest countries, industrial and manufacturing workers are a small fraction of the total population. In India,

for example, only 22 million people—10 percent of the work force—are employed in a formal setting. Often fertility among industrial and manufacturing workers is lower than for the population as a whole, so industry programs do not always focus on the greatest need. And without programs for the rest of a country's population, workers encouraged to have small families may feel they are being asked to bear all the burden for curbing population growth in their country.[27]

A deferred payment program capable of slowing a country's overall birth rate must be a national program, and would be more a universal social security program than merely a family planning incentive scheme.[28] Such a program would have the costs and administrative burdens of a major social welfare reform. For this kind of program to work, a national government must have meaningful contact with most of its citizens. The country's citizens would need confidence in the solvency and good faith of their government and enough sophistication to understand the notion of deferred payments. Many governments around the world have little contact with the vast majority of their citizens, who live simply in villages and remote areas. Too many governments give their citizens little reason to trust that the government will be around, and solvent, to make payments in the future.

A wholly different kind of incentive scheme—community incentives—has most of the advantages of deferred-payment programs, and few of the disadvantages. Community incentives reward whole villages with development projects as more and more people in the community use family planning, or as fertility falls. In a community incentive scheme, the government agrees to reward a community with a project that will increase its wealth. This might be a well, irrigation, a diesel pump, livestock, a biogas plant, a school, roads, parasite control or low-interest loans. The projects are funded if the community complies with specified family planning or fertility goals, such as contraception practiced by 60 percent of couples, or fertility not exceeding an average of two or three children per family. The programs are sometimes quite complex, involving deferred payments and participation by individuals earning shares in a common fund.[29]

Thailand's innovative family planning promoter, Mechai Viravaidya, has organized a number of programs since the late seventies that build on Thailand's household distribution of contraceptives. Since 1974, Community-Based Family Planning Services (CBFPS) has brought family planning directly to villagers by involving local shopkeepers, farmers, teachers and housewives in distributing contraceptives. Early on, Mechai encouraged villages accepting family planning to invest in a pair of water buffalo, which the village contraceptive distributors manage. Family planning users can rent the animals at half the price charged to people not practicing family planning.[30]

In 1975 the CBFPS began a marketing program. People practicing family planning in some villages deposited their agricultural goods and handicrafts with a village family planning distributor, who transported the goods directly to market. By avoiding a middleman, the villagers increased their profits. Fertilizer, seed or garlic purchased wholesale and brought back to the village was sold to family planning users at below-market prices. In 1978 the program expanded to a province in northern Thailand in which piglets were given to women who agreed not to become pregnant during the animal's fattening period. The pigs were marketed and sold by the family planning group, which shared profits with the contract grower. After three years, no woman contracting to raise a pig had become pregnant.[31]

These "common sense" approaches to family planning—linking it to community improvement and self-help—have evolved in Thailand into a development project for six villages in the northeast. Under the project, shares in a revolving village fund are issued to reward small families and long spacing between births. The village as a whole makes loans from the fund for village projects, such as tree-planting or marketing farm products and handicrafts.[32]

Indonesia is another country where the promotion of family planning and the distribution of contraceptives has been rooted at the local level. By the late seventies, Indonesia's community-based distribution program had expanded so that some village groups held

lotteries and gave prizes to reward family planning acceptance. The use of contraceptives is publicly monitored with a color-coded village map: red for pill-using households, blue for IUD-using households, green for condom-using households, and blanks for households not practicing family planning. In some villages, the chief bangs on a drum at the same time every day to remind village women to take their birth control pills.[33]

Linking family planning programs to local development is a logical outgrowth of community involvement in family planning in Indonesia. Based on this approach, the World Bank is currently financing a $3 million community incentive scheme in that country. Nearly 60 villages where 35 percent of couples practice contraception will receive grants for public works projects such as roadbuilding and loans for income-generating activities. Village family planning acceptor groups, aided by technical advisors, will select projects for the community.[34]

In addition to promoting small families, community incentives have the advantage of creating an environment—greater wealth—in which a small family is desirable. Because they are carried out locally and decisions are made and enforced through local mechanisms, community incentives do not suffer from the problems of programs devised and attempted to be enforced at the national level. Few people fear their village will disappear; the same cannot be said of whoever happens to hold national office at the time. If community programs have become self-funding, they can survive if the national government changes hands or loses interest in family planning. Thus, community development schemes are both good development projects and good family planning projects.

On the other hand, a successful community project requires social cohesion in villages, which does not exist everywhere. Relying as they do on peer pressure, community incentives involve persuasion, if not coercion, of the most direct kind—from one's neighbors and community leaders. If local power structures favor an elite, the incentive program may also, possibly to the detriment of the community as a whole. But community incentive schemes minimize the psycho-

"In some Indonesian villages, the chief bangs on a drum at the same time every day to remind village women to take their birth control pills."

logical influence present when individuals are offered rewards by larger, more powerful entities. And public projects such as schools, roads or wells can benefit the entire community, not just elites. Overall, the advantages of community development incentive programs far outweigh their drawbacks.

Penalizing Large Families

Rewarding people who use family planning or who limit their families is not the only way to promote the small family norm. The other side of this coin is penalties for large families. Called "negative incentives" or "disincentives," these measures impose costs on large families or withhold benefits such as housing subsidies, employment benefits or preference in school admission. Singapore is the only country widely experienced with disincentives, in part because few countries wealthy enough for disincentives to be meaningful have population policies that limit family size.

Disincentive measures do exist, at least in name, in a number of countries less developed than Singapore. Employed mothers receive maternity benefits for no more than four births in the Philippines, three in Ghana, Hong Kong and Malaysia, and two in South Korea. In Tanzania women are entitled to paid maternity leave only once every three years. Child allowances—income supplements usually paid to government employees—are limited to three or fewer children in Ghana, South Korea and Thailand and have been abolished in Sri Lanka. Income tax deductions for dependent children have been eliminated in Tanzania, Sri Lanka and Nepal, and are limited to two or fewer children in South Korea and Pakistan.[35]

Only Singapore has a comprehensive program of disincentives specifically designed to promote two-child families. Births beyond the second child affect housing, education, income tax, maternity leave and fees in government maternity hospitals. In 1973 the Singapore government stopped giving priority to large families seeking government-subsidized apartments, and a previous ban on subletting by families with no more than three children was removed. Before

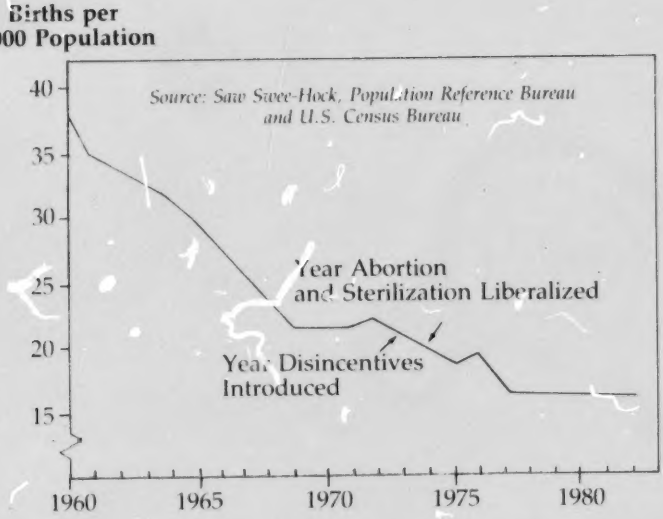

Figure 2: Singapore's Birth Rate, 1960-1982

1973, brothers and sisters of children attending a school were given priority in admittance to kindergarten; since then, only the first three children in a family receive priority, unless the fourth child is the last. Paid maternity leave for civil servants and private sector employees in Singapore is limited to the first two births. Since 1973, taxpayers can take full $750 income tax deductions only for two children; a third deduction is limited to $500. Fees in government maternity hospitals rise with family size, according to three different schedules based on income. Hospital fees are lowest for the first and second children, but accelerate—more rapidly for the lowest income people—with other births.[36]

If Singapore is typical, a comprehensive disincentive program can get results. Though the effects of Singapore's program are hard to isolate

"Singapore's policy is that people should not be rewarded for doing what they are obligated to do anyway."

from those of rising wealth and more education, most observers feel that a fertility decline that had already begun in Singapore was accelerated by the disincentive measures and liberal abortion and sterilization laws that followed the measures by a year. (See Figure 2.) Births beyond the second child make up only a fifth of all births in Singapore today, compared with half in 1970, and fertility is well below replacement level.[37]

Disincentives are an economical population policy. They deprive people of things that would otherwise cost the government money, rather than reward them with things the government would not otherwise pay out. And they are well-suited for countries that view curbing population growth as a social responsibility. Singapore's government, for example, prefers disincentives over rewards for small families because its policy is that people should not be rewarded for doing what they are obligated to do anyway.[38]

Disincentives have their share of drawbacks. Where an incentive can be so attractive that an individual cannot refuse it, a disincentive can impose a cost so high that an individual cannot pay it, leaving no real choice but to do what the disincentive is designed to promote. Also, if the reward or benefit withheld in a disincentive program is particularly essential or valuable to the individual, even though not valuable in absolute terms, a disincentive can be both coercive and inhumane. Withholding food from the poor if they have many children, for example, is so punitive it becomes pure compulsion. The person faced with starvation or accepting sterilization has not been given any real choice.

Research into how Singapore's disincentive scheme has worked softens this criticism of disincentives like Singapore's, however. P.S.J. Chen and James Fawcett have concluded, after analyzing a number of survey results, that Singapore's measures act less as actual barriers to childbearing than as "education." The policies promote the idea that the Singapore government is serious about its citizens having small families because of economic and environmental constraints on population growth. As a result, people are aware of family planning and realize its connection to their own well-being. The laws educate peo-

ple and convince them of the gravity of population problems more than they actually prevent childbearing that people want. Demographers Janet Salaff and Aline Wong say Singaporeans they surveyed "want small families themselves, [and] they do not believe that they are being unduly restricted by the policies." One working-class man interviewed after the disincentive measures had been in place a few years said, "Actually, if a person is sensible enough to sit down and think about the future, he would automatically cut down on the number of children desired. Regardless of all those government policies, if one does get to think about it, he would plan for a two-child family."[39]

Another criticism of disincentive schemes is that, if not fashioned carefully, they can punish the innocent. Critics of Singapore's program contend that children there are punished by being denied admission to the best schools unless they come from a small family. In other countries, some disincentive schemes seem particularly harsh on the children born. In Sri Lanka, for example, food stamps are given to low-income families with two children, but reportedly no additional stamps are given to families with more than two. During the "Emergency" declared in India in 1975, food rations were reportedly denied three-children families in Bihar, and subsidized food was witheld from parents whose ration cards showed large families. Besides unjustly punishing children, these progams specifically contradict a larger goal of improving maternal and child health, which is believed to reduce fertility in the long term. Thus they are both unfair and unlikely to encourage a birth rate decline.[40]

Effects like these on the poor are rare, however; disincentives are more likely not to touch the vast rural poor in many developing countries with whom governments have little contact. Indeed, disincentives are best suited for relatively wealthy countries like Singapore, where people receive welfare benefits beyond food rations and pay taxes that can be manipulated to encourage small families.

But the very wealth that makes disincentives feasible can blunt their effectiveness. For example, some have said that eliminating the tax deduction from income for children in the United States could help

lower fertility. Inflation and recession, however, are probably much more effective deterrents to childbearing. With the cost of raising and educating a child to age 22 at over $200,000 in the United States, the threatened loss of a $1,000 annual deduction probably will not have much impact on a couple considering having a child. Only the poor are likely to be affected by policies in wealthy countries that withhold benefits from large families, and for the poor, rewards that improve welfare are more appropriate than penalties.[41]

Disincentives are an economical and effective option in the few countries with the right level of wealth. But they have a role in other countries too. Disincentives, whether they affect a majority of the population or not, can be strong statements of government policy in favor of the small family. Such statements may accomplish more symbolically than actual enforcement of penalties ever can.

Lessons from China and India

China and India offer special lessons for governments attempting to promote the small-family norm. Their experience is essential to understanding the potential and limits of incentive and disincentive programs, but not because their rewards and penalties have worked. These two countries have gone beyond rewards and penalties to attempt policies that categorically require certain family planning behavior. In India's case, state compulsory sterilization laws for anyone with three children were authorized during the Emergency declared there in 1975. China is now attempting to enforce a compulsory one-child family policy. Particularly noteworthy are China's complex program of rewards and penalties and the goverment's efforts to affect birth planning at the household level.

India's experience with compulsory sterilization can be quickly summarized. Alarmed by a deteriorating economy, Indira Gandhi's government in 1975 suspended many civil liberties, outlawed strikes, censored the press and cleared beggars from the streets. As part of a reinvigorated family planning program, states were authorized to compel couples with more than three children to be sterilized. Only

the state of Maharashtra actually passed compulsory sterilization legislation, and even this law did not take effect before the Emergency ended in 1977. But the existing sterilization program was stepped up and some forced sterilizations were reported. In the year before the Emergency ended, 8.3 million sterilizations were performed in India, three times the number in the previous year. By all accounts, only a small fraction of these were forced. But some local abuses were particularly severe. Many people limited their travel or even left home out of fear that they would be rounded up to be sterilized.[42]

India's over-energetic program sowed the seeds of its own destruction. People perceived that the government was launching a compulsory sterilization campaign, and in a backlash, Indira Gandhi's government was voted out of office in March 1977, after 11 years in power. Not even a million sterilizations were performed in 1978, and the percentage of married couples using contraception, which had climbed to nearly 26 percent in 1977, leveled off at just over 24 percent for the next five years.[43]

China announced its one-child policy in 1979, though the government has promoted birth planning, with some interruptions, since the early fifties. Family planning efforts ebbed in the late fifties and sixties, during the years of the Great Leap Forward and the Cultural Revolution. Since the seventies, however, contraceptives, abortion and sterilization have been widely available and free, and late marriage and spacing of births have been encouraged and rewarded.[44]

In 1973 China stepped up its promotion of birth control by "collectivizing" the childbearing decision, making a couple's family size a matter of public discussion and sanction to promote the policy of "late, spaced and few." The goal was replacement fertility—two children per couple, on average, with lower fertility in urban areas offsetting higher fertility in the countryside. Then in the late seventies, China's leaders looked more closely at the country's age structure and its implications for future population growth. They saw that between 1980 and 1985, the number of women reaching age 22 and entering

"India's over-energetic program sowed the seeds of its own destruction."

childbearing years would increase by 50 percent. This "boom" in the numbers of young adults echoed the "baby booms" of the fifties and sixties, when China's birth planning program was weak. Unless the enormous ranks of young couples had fewer than two children, China's leaders saw continued economic gains as impossible. In 1979, the "few" in China's slogan was replaced with "one."[45]

The government has since issued successively stricter statements promoting the one-child norm. In the fall of 1980, the Communist Party released a statement encouraging all Party members, government officials, and women's and youth groups to promote the one-child family by their own example. A March 1982 Party document broadened the scope of the policy. A *People's Daily* editorial on the new statement declared, "Under no circumstances may a couple give birth to a third child," though "if certain people . . . really have actual problems and want to have a second child, a planned arrangement can be made after their cases have been reviewed and approved." Nine months later, a new government document decreed, "We must popularize the practice of one child for each couple, strictly control second births and resolutely prevent additional births." This statement is the first to be supported by the Army; thus it has the most political support of any statement on the one-child policy to date. The most recent statement from China on its birth control program is in step with the progression of ever-stricter policies: as broadcast over Chinese radio in May 1983, sterilization is now compulsory for one of the parents in a two-child family.[46]

The backbone of China's one-child family policy is its method of planning births. Birth planning leadership groups organized in each of China's local political units direct the program. In rural areas, teams consisting of party officials, "barefoot" doctors (paramedics) and midwives visit production brigades, an administrative subunit of communes, to describe birth planning and its advantages. Similar teams within the production brigades visit individual households to publicize family planning and give advice. In cities, birth planning leaders reach factories, neighborhoods and their subdivisions, committees. The leadership groups and teams for each subdivision of Chinese society prepare materials to distribute to households and to

use in study sessions. Actual fertility targets for local areas are set in study sessions to meet the provincial quota, which in turn conforms with the national one-child goal.[47]

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Pressure from party officials and family planning workers achieves most of the compliance with the birth plans. Accompanying this are generous rewards given to couples pledging to have only one child and receiving an "Only Child Glory Certificate." Benefits vary between rural and urban areas, but the goal is for "only" children to have a healthy, prosperous upbringing. In urban areas, certificate holders receive a stipend until the child's fourteenth birthday equal to a month's wage annually. When their only child is born, mothers get two extra weeks of paid maternity leave with a certificate. Rural certificate holders are allocated extra work points (the equivalent of wages) until their child's fourteenth year. In some areas, a one-time cash bonus is also given. The child itself receives free or subsidized medical care, an adult's food ration, and highest priority in schooling and employment. Parents of one child have pensions increased by 5 percent; childless couples receive a 10 percent increase.[48]

China's program also includes disincentives. For example, in one rural county in Jilin province, couples with children not part of the community's birth quota are fined an amount equivalent to the annual per capita income in that area. A 10 percent annual reduction in the couple's combined work points is also made for the first fourteen years of the "unauthorized" child's life. In Shanghai, couples having unauthorized second births (allowed only for couples with handicapped or adopted first children) reportedly have 10 percent of their combined wages deducted for 16 years. This fine is paid to a welfare fund that provides benefits to families holding one-child certificates. Similar fines are exacted in Beijing, Tianjian, Hunan, Shanghai and Anhui. In Anhui, where arable land per person has fallen below a tenth of a hectare, an only child is reportedly allotted twice as much land as usual; second, third and other children are denied their land portion; and parents of two or more children have their previously-assigned plots taken away. This can mean that one-child families have twice the income of other families.[49]

It is too early to tell from birth rate data whether China's one-child policy is working. The 1982 census found a birth rate for 1981 of 21 births per thousand people in the population, down from nearly 40 in 1964. A birth rate of 21 suggests the average Chinese family still has more than two children. But in 1980, 80 percent of all births in China were first or second children, compared with 70 percent in 1978. And by June 1981, 11 million Chinese couples had reportedly pledged to stop at one by accepting certificates. That is about 57 percent of Chinese couples with one child, and the percentage is higher in some provinces. In Sichuan, for example, where one-tenth of China's population lives, 98 percent of one-child families reportedly have signed the pledge to stop at one. In 1980 only 11 births were reported in Sichuan for every one thousand people in the population. Only Denmark, West Germany and Italy have birth rates that low.[50]

In a number of urban and suburban areas, over three-fourths of one-child families—of which there are proportionately more than in rural areas—have pledged to stop at one. In Shanghai, a city of more than 12 million, only 351 of 134,000 births were not first or second children in 1980. In comparison, a quarter of all U.S. births in 1980 were to couples with two children already.[51]

China's experience is both encouraging and discouraging for leaders seeking ways to curb population growth. Countries attempting to design effective family planning programs could easily adapt some elements of China's program—offering the widest range of contraceptives, for example. (In China, this includes new techniques such as the "visiting pill"—taken only during reunions with a husband who spends most of the year working in another place—and a nonsurgical male sterilization technique involving injections). China also uses paramedics to contact people individually, something other countries could emulate. Generally encouraging is that such a massive undertaking—to turn around the childbearing practices of over a fifth of the world's population—has any effect at all. On the other hand, China is unique. Its population is homogeneous, and party control over individuals is pervasive.[52]

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And there is resistance to China's program. Forced abortions, forced sterilizations and harassment of pregnant women by local family planning officials and party members have been reported. So strong was local resistance to the program that some family planning officials have reportedly been kept forcibly from entering a village. Manuals are said to admonish family planning workers not to be put off by physical resistance to their efforts. In other countries, resistance to a program as severe as China's might well be worse.[53]

Another consequence of China's rigorous one-child policy reduces its role as an example of wise government control of population. Because China's policy was grafted onto a culture where sons are strongly preferred, limiting couples to one child has predictably increased the incidence of female infanticide. The proportion of males in China's population has always been higher than in other societies, especially non-Asian ones. But the proportion of males at the youngest ages has risen unnaturally high recently. Whether the low proportion of females is the result of under-reporting, killing or neglecting girl children is not known. But as noted in *China Daily*, "The reason for the high proportion of males is closely linked to the feudal biases against women and the vicious habit of killing or abandoning baby girls."[54]

Perhaps the best lesson for the developing world from China and India's experience is that countries should not wait to slow population growth until compulsory measures seem the only answer. Compulsion runs a high risk of failure. Only China has had any success so far, and whether the stringent policy works in the long run remains to be seen. China has paid a price—in freedom and diversity—for attempting the one-child policy, a price other governments may not be willing or able to pay. India's experience during the Emergency shows the practical limits of enforcing an unpopular policy in a diverse democracy. The sterilizations or abortions that a government might successfully compel before a public backlash would be both a sorry and an unnecessary violation of human dignity. There are many other family planning options that do not force people against their wills. The lesson from China and India is to make those efforts now, before compulsion seems the only course to take.

"Some form of pension system that could be expanded and restructured to favor small families now exists in nearly every country."

Expanding the Role of Incentives and Disincentives

A family planning program of financial rewards or penalties is not the first or only step a government should take to curb population growth. Improving the health of mothers and their babies, educating girls, creating more jobs for women and getting family planning to as many people as possible are all important to stabilizing population, as they are to improving the lives of people on a daily basis. But incentives and disincentives could have a larger role in family planning programs around the world than they have played so far.

Where family planning is available to people participating in a formal economy and where financial rewards and penalties mean something and can be enforced, family planning programs could be strengthened with incentives and disincentives. These policies can work not only through government efforts, but also through private industry. A significant portion of the Philippine labor force, for example, works in industry or manufacturing. A Philippine labor law requires employers to promote family planning through employment benefits, savings and pension plans. If this law was rigorously enforced and amended to limit benefits to two children instead of four, fertility might fall much faster.[55]

Some form of pension system that could be expanded and restructured to favor small families now exists in nearly every country. Though most of these systems are skeletal, covering only government employees, some have broader coverage. Five million state employees in Mexico are covered by a pension program through the Social Security Institute of Mexico, which also provides health and family planning services to a third of Mexico's population. Expanding the pension plan and weaving in incentives for small families would add bite to Mexico's family planning program.[56]

For the vast majority of developing world people living in rural areas, community development incentive programs are ideal for both rural development and family planning. Where a community-oriented family planning program already exists, a development program could build on it. Where not yet readily available, family planning

could be introduced at the same time as rural development assistance. At first, a program could "sweeten" the offer of family planning by teaming it with other kinds of help such as health care, schooling, training and the development of marketing cooperatives. Later, programs similar to those now under way in Thailand and Indonesia could link development assistance more closely to family planning acceptance and fertility declines.

As written, Egypt's official population policy attempts to integrate family planning into local development. It is typical of national programs that could work better if incentives were included. According to Egyptian policy, "an overall development package" for villages is supposed to simultaneously introduce family planning, upgrade local management skills, improve health and generate employment. Cottage industries are encouraged, for example, both to raise incomes and to provide women with meaningful employment that might also reduce fertility. Though this policy is a good start, tying development more closely to fertility performance might push fertility down more rapidly.[57]

Community incentive programs could draw on the experience of projects aimed at improving the lot of women. Directing family planning incentives at women makes good sense, of course, because women are the ones who have babies. But linking family planning with efforts that improve women's lives by easing their work load, increasing their earning power and educating them is a long-term investment in both lowered fertility and development.[58]

For some women, a child care center, a mill for grinding grain or a nearby woodlot might be the best way to ease the burden of their "double day" of work in the fields and at home. School fees that drain household budgets, or distant markets that prevent the easy sale of farm goods may be the chief concern of women elsewhere. Each case suggests its own particular community incentive scheme—matching family planning with the development of labor-saving devices, school fee subsidies or market cooperatives.

"Paying young women to remain single and childless would both reduce their economic dependence and lower birth rates."

Millions of women around the world work in traditional village and cottage industries such as weaving, dyeing and handicrafts, and in services such as sweeping, scavenging and domestic cleaning. Credit to buy both raw materials and tools is particularly scarce yet essential for these women, and marketing is a problem. Their work is seldom regulated by minimum wages or maximum hours, and employment benefits rarely exist. Offering subsidized loans and organizing marketing and production cooperatives would improve the lives of millions of these women. Projects testing these approaches have been tried in El Salvador, Jamaica, Bolivia and Bangladesh, among other places. The lessons learned from them can be applied to programs that also include family planning incentives.[59]

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Incentive programs can be targeted to the particular cause of high fertility in a country. In Taiwan, South Korea and Hong Kong, for example, birth rates have fallen rapidly, but families still exceed the two-child norm required to stabilize population. In these countries people keep trying for a son, even after they have two daughters. An education campaign stressing the equality of sons and daughters and legal reforms promoting equality in inheritance, employment and property ownership would improve the chances of an incentive program's success. The program itself could reward two-child families by offering both sons and daughters loans for education fees, life and health insurance policies or job training. As with the disincentive program in Singapore, strong government commitment could change people's attitudes as much as the rewards change family size.

Another target for incentive programs is teenage women. In most developing countries, two out of five teenage girls are married, and most of them have the first of their six or more children before they are 20.[60] Many women marry and become mothers early for economic security. Paying young women to remain single and childless would both reduce their economic dependence and lower birth rates. Monthly or quarterly payments could be made from a woman's fifteenth birthday until she married, the principal and interest to be forfeited if she married before her twentieth birthday. A bonus could be offered couples waiting two years after marrying to have their first child. Including free annual medical examinations in the reward

would allow contact with the young women to report on earnings and educate them about family planning and employment. The five-to-seven-year payback period would not require as much confidence in the government or the family planning program as retirement programs do. Young women in the Third World would in effect earn their dowry with such an account.

If such a program successfully reached even half the teenage girls in Bangladesh, nearly a half million births—a tenth of all births in the country—would be prevented annually. Such a program would be particularly appropriate for the United States, where more teenage girls become pregnant every year than bear children in Bangladesh. The United States already spends $8.6 billion a year supporting teenage mothers and their children; channeling a portion of this money into an incentive program to prevent those pregnancies would be a better investment.[61]

Wherever incentives or disincentives are undertaken, a commitment from the highest level of government is needed. Nearly as important as allocating funds for programs is a dedication by the national leadership to the goal of population stabilization or universal availability of family planning. No developing country has achieved a significant fertility decline without such a government commitment. Official support works at many levels, even down to the most personal. The Population Crisis Committee quotes a Tunisian peasant woman as saying, "If President Bourguiba says I can take the pill, who is my husband to say no?"[62]

Policies to encourage smaller families should nudge rather than push people to have fewer children. Policies work better if they reinforce an existing trend toward smaller families and do not depart too violently from the prevailing norms. Attempting to enforce a policy like China's would not make sense in Africa, for example, where the notion of limiting one's family at all is foreign to many. Rewarding Africans to space their children is more appropriate; it would build on a cultural tradition of abstinence after childbearing. From there, programs could be introduced to limit the number of children.[63]

"A successful small-family policy requires an understanding of the nation's limits gained through population and environmental education."

Government policies are more acceptable if they are directed at future births and do not penalize people who have had large families before it was against government policy. Also, strong programs are more likely to be accepted if milder ones have first been attempted. Similarly, people are more likely to accept penalties for large families if small families have first been encouraged. Policies are more likely to succeed if they are phased in, with widespread advance notice of the dates they take effect. Singapore launched its disincentive program with several months of notice, and introduced policies gradually, two reasons for its success.[64]

It is wise to anticipate the consequences of low fertility. China's program, for example, acknowledges the effect of small families on the elderly, who run a higher risk of being left unsupported. Besides encouraging general respect for the elderly, the Chinese government has enacted criminal penalties for neglecting parents. The Marriage Law of 1980, too, allows a husband to join his wife's family. Before this law was passed the daughter in a one-child family would have joined her husband's family and been lost to her own family as a source of financial support. By joining his wife's family, a husband can fulfill the role of supporting "son" in her parents' old age.[65]

Government programs using disincentives will be more credible if they take into account the noncompliance that will inevitably occur. Besides the ethical issues involved in compulsory laws, a policy that presents people with two options—to comply or not to comply—is better than one that categorically requires a certain family size. To preserve legitimacy in the face of noncompliance, penalties should be linked in some way to the problems of larger families. Higher school and maternity hospital fees for third and fourth children, for example, help defray the cost that large families impose on society. One reason Singapore's policy has been respected is that it assumes that some people will refuse to "stop at two." People who refuse pay higher fees; this is, in fact, the basis for Singapore's program.

A successful small-family policy requires an understanding of the nation's limits gained through population and environmental education. China's one-child policy, for example, is promoted on eco-

nomic, ecological and basic survival grounds. The demographic and resource complexities have been reduced to a simple message promulgated everywhere: if China grows beyond 1.2 billion, it probably will be unable to feed itself and maintain hard-earned gains in living standards. One reason Singapore's policy has succeeded is that constraints on this tiny island nation are evident to everyone daily.

Even successful family planning programs making rewards or imposing penalties will risk affecting some people more than others, because offering a reward of a fixed size will always attract the poor more than the rich. This may be fair from the strict viewpoint of limiting fertility, because more births in excess of two per family occur among the poor. And with incentive plans that increase a family's wealth, such as savings account plans, it is good that the poor receive most of the benefits. To minimize the inequality of penalties, they can be based on a sliding scale to have a similar effect on people with different incomes. But to the extent that a program risks coercive influence, and the poor are more susceptible to that, incentive and disincentive programs will disproportionately coerce the poor.

Family planning incentives and disincentives can single out groups other than the poor in a society. An overemphasis on reaching women may provoke criticism. Programs targeted to workers in a particular industry, government employees or taxpayers may affect these groups more than others. In many countries, the people easiest to target often have smaller families than the rural poor. Because they are more likely to be wealthier, income-enhancing schemes aimed at them might mean that the rich grow richer. The inequity of these programs would strain stability in a country with class, racial or religious disparities. Any national family planning program, with or without incentives or disincentives, must be sensitive to this larger political problem and tailor policies to avoid increasing internal tensions.

Sex and childbearing are such complicated human activities that whenever governments pull a string to change individual behavior, it is hard to predict which knot will tighten. But so many different incentive and disincentive schemes are available that governments

can tailor them to the cultural, economic and social setting in their countries for the most success at the least economic and social cost. Unfairness or coercion can be minimized by careful choice of programs, amounts of payments and counseling. Well designed and carried out, incentive and disincentive schemes can probably help reduce fertility and speed progress toward a stabilized population that our small planet has a better chance of supporting adequately. Governments reluctant to confront the difficulties of influencing family size—including the financial burden—should consider the alternatives: doublings and triplings of populations already on the margin of survival. The complexities counsel careful attention, not laissez-faire.

Notes

1. Economic growth figures for the fifties, sixties and seventies from Herbert Block, *The Planetary Product in 1980: A Creative Pause?* (Washington, D.C.: Central Intelligence Agency, 1981). Figure from 1979 to 1982, Worldwatch estimate based on annual growth rates reported by Wharton Econometric Forecasting Associates, Philadelphia, Pennsylvania.

2. "Asia's Quarter Century," *Asiaweek*, January 7, 1983 and The World Bank, *1981 World Bank Atlas* (Washington, D.C.: 1982).

3. United Nations *World Population Trends and Policies, 1981 Monitoring Report*, Vol. II (New York: 1982).

4. Population growth, if current fertility declines are not accelerated, from computer projections provided by Tomas Frejka, The Population Council, New York, as reported in Tomas Frejka, "Long-Term Prospects for World Population Growth," *Population and Development Review*, September 1981.

5. Countries with incentive or disincentive programs drawn from various sources, but chiefly from several articles in *People* [journal of the International Planned Parenthood Federation], Vol. 9, No. 4, 1982; Dorothy L. Nortman, *Population and Family Planning Programs: A Compendium of Data through 1981* (New York: The Population Council, 1981). United Nations Population Division, *Population Policy Briefs: Current Situation in Developing Countries and Selected Territories, 1982* (New York: 1982); United Nations, *World Population Trends and Policies;* and Henry P. David, "Incentives, Reproductive Behavior, and Integrated Community Development in Asia," *Studies in Family Planning*, May 1982. For a comprehensive compilation of family planning incentive and disincentive programs of all types, both past and present, see Patricia D. Barnett's unpublished chart of programs prepared for the Population Crisis Committee, Washington, D.C., May 1983 (draft).

6. Portion of couples reached by family planning programs and figure on unwanted fertility based on data in Robert Lightbourne, Jr. and Susheela Singh, with Cynthia Green, *The World Fertility Survey: Charting Global Childbearing* (Washington, D.C.: Population Reference Bureau, 1982). Average family size in the developing world from United Nations, *World Population Prospects as Assessed in 1980* (New York: 1981).

7. Henry P. David, "Incentives, Reproductive Behavior, and Integrated Community Development in Asia." See David for a current overview of incentive programs and an extensive list of sources in which all the schemes mentioned in this paper are discussed. For a more detailed discussion of administrative and financial aspects of all kinds of incentive programs than this paper provides, see Edward Pohlman, *Incentives and Compensations in Birth Planning* (Chapel Hill, N. Carolina: Carolina Population Center, 1971).

8. Historical incentive figure given by Pravin Visaria in a presentation at a meeting, "Fertility Incentives and Disincentives," held at the National Academy of Sciences, Washington, D.C., November 24, 1982. Current payments in India from Pravin Visaria and Leela Visaria, *India's Population: Second and Growing* (Washington, D.C., Population Reference Bureau, 1981). Indian wage data from Centre for Monitoring the Indian Economy (CMIE), *Basic Statistics Relating to the Indian Economy* (Bombay, India: 1982). Sri Lankan incentive figure, Nuray Fincancioglu, "Carrots and Sticks," *People*, Vol. 9, No. 4, 1982. Sri Lankan income figure from Block, *The Planetary Product in 1980*. Bangladesh information from Michael Jordan, U.S. Department of State, Washington, D.C., private communication, January 5, 1983.

9. "Fincancioglu, "Carrots and Sticks."

10. Dorothy Nortman, "Sterilization and the Birth Rate," *Studies in Family Planning*, September/October 1980.

11. Saw Swee-Hock, *Population Control for Zero Growth in Singapore* (Singapore: Oxford University Press, 1980); Fincancioglu, "Carrots and Sticks"; and Planned Parenthood Federation of Korea, *New Population Policy in Korea: Social and Legal Support for Small Families* (Seoul: 1982).

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